

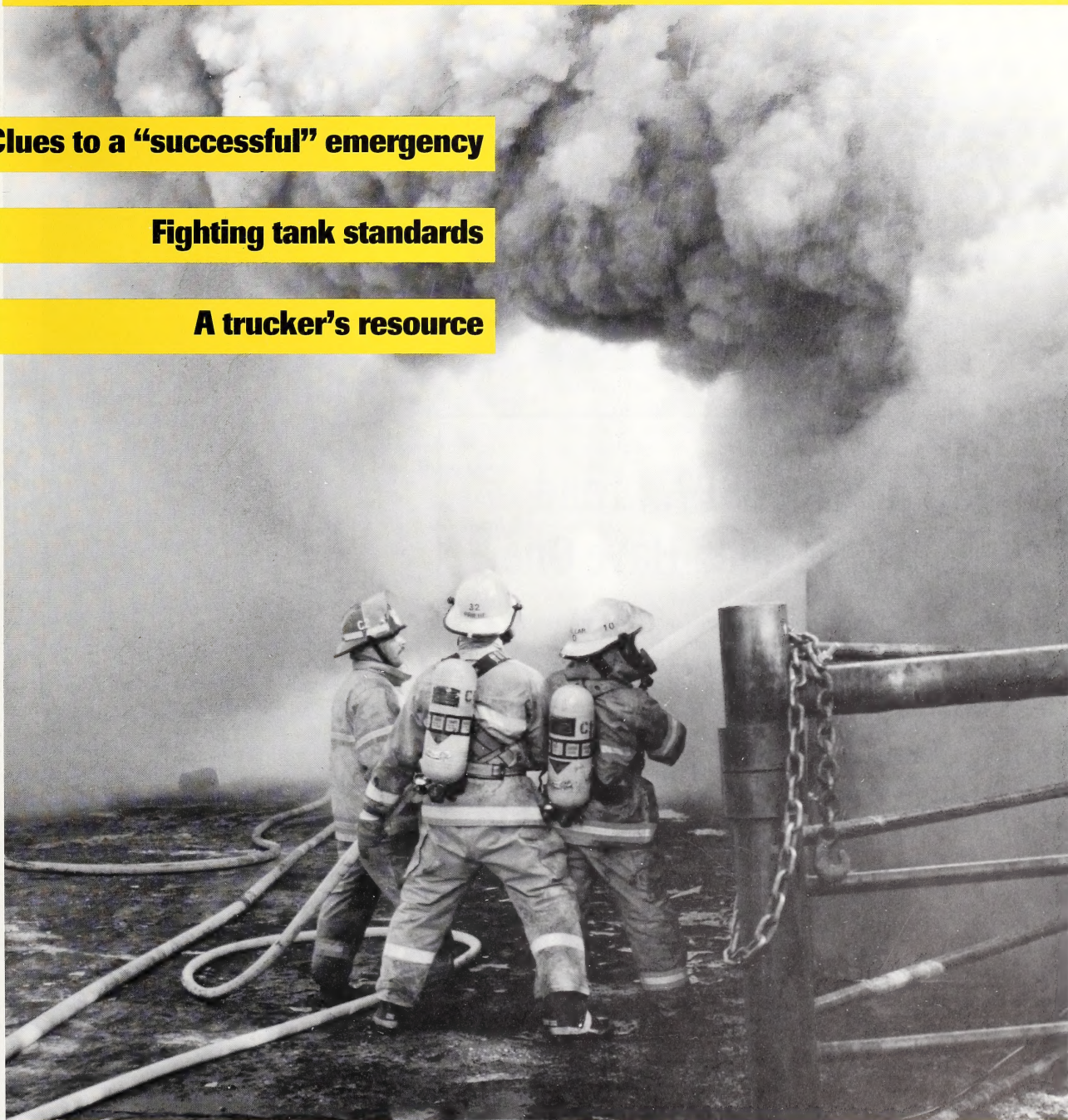
AGENCY

INSIGHT

Clues to a “successful” emergency

Fighting tank standards

A trucker’s resource



October
1994

Emergency Response

Volume 6
Number 3

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Insight is published quarterly by Alberta Public Safety Services (APSS). The publication aims to inform readers about current developments concerning topics which relate to the mandate of APSS: to prepare for, respond to and recover from man-made or natural disasters in Alberta. This mandate includes activities in the areas of disaster services management, as well as the handling, offering and transporting of dangerous goods.

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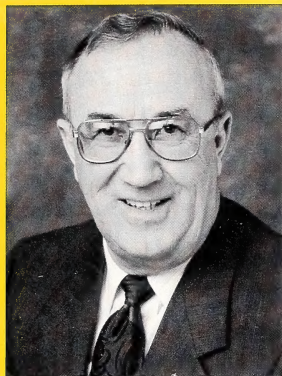
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Firefighters battle a barn blaze on a farm near Stony Plain. Photo courtesy of Stony Plain This Week.

Alberta
PUBLIC SAFETY SERVICES



The Minister's Point of View

CANADIANA

FEB 21 1995

Emergency response in Alberta: It starts before the alarm bell goes off

Insight met with Mr. Peter Trynchy, Minister Responsible for Alberta Public Safety Services, to ask some questions about emergency response in the province.

Q Who's in charge at an emergency or disaster?

A There are actually two answers to that question. The short answer is simply that provincial legislation gives municipalities the responsibility to handle emergencies and disasters. The longer one, and a subject of ongoing debate, is who or what jurisdictions in particular are in charge within that municipality, and how they work together.

It's vitally important that the "who's in charge?" question not lead to confusion during an emergency response. The answers must be thought out beforehand.

Q What role does Alberta Public Safety Services play in an emergency response?

A As part of our mandate, APSS does a great deal of work with municipalities before emergencies ever happen. We co-operate with municipalities to develop effective emergency plans, and we help test those plans to find out how they can be improved. Each year, several thousand people enrol in courses offered across the province by our Training School and other branches of APSS, learning everything from basic rescue techniques to emergency planning and management.

Be prepared is not only the Boy Scout's motto — it's ours, too. We've found through long experience that being prepared is the best strategy to handle an emergency.

When an emergency does occur, APSS can provide advice or find the resources needed if a municipality asks for them.

Q What happens if a municipality can't handle an emergency on its own?

A On rare occasions, a major emergency or disaster will stretch a municipality's response capability beyond the limit. It can happen after a tornado, for example, or in a major dangerous goods incident. In these cases, the municipality can call on its neighbours and APSS for help. Again, the planning for these events takes place before they ever happen. Municipalities get together and work out mutual aid agreements that often include government departments or agencies and local industry.

Large scale responses involve many different players, but ultimately, the municipality is still in charge.

Q Are there any new trends in emergency response?

A One trend that's starting in Alberta is a move towards regional response. In the Medicine Hat area, a number of municipalities have set up a single planning group with one emergency plan.

Around Fort Saskatchewan, a large group of response organizations are pooling their efforts and resources to form a single mutual aid group called Northeast Region — CAER (Community Awareness and Emergency Response). When it starts up in January, this new group will integrate emergency planning and response in nine municipalities, including some of the country's major manufacturing and processing companies.

These two examples, and others like them, show the way the emergency response community in Alberta never stops looking for new ways to be better, faster, more effective and more efficient.

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Set up a command post and get everyone communicating

Big city calls



Peter Pendlebury
Co-ordinator, Hazardous Materials
Section
Calgary Fire Department

The call came in as a sour gas complaint — a well flare-out about 10 kilometres east Calgary, near the Town of Chestermere. It was November 13, 1993, 21:04 hours.

To the Calgary Fire Department (#12 Squad, #22 Tank and #2 HazMat), this was a potentially serious out-of-city response. Besides being one of Calgary's worst nightmares, sour gas calls are serious for several reasons.

First, there's the potential risk to the public and the environment. Second, they can be a major drain on the city's resources. Then there's the complexity of the response, which involves a number of different response groups and no less than nine government agencies.

Because of the call's seriousness, the department dispatched the East District Chief to set up a command post and direct operations.

The #2 HazMat response crew arrived at the well site, suited up and began monitoring the area. Fire personnel started standard operating procedures, including phone calls to inform the Energy Resources Conservation Board (ERCB), Alberta Environmental Protection, Alberta Public Safety Services (APSS), Alberta Labour (Occupational Health and Safety) and the Strathmore RCMP.

Lessons learned

The response team successfully handled the Chestermere emergency and learned several lessons. Some of the lessons apply specifically to sour gas emergencies, but most are true for any urban emergency.

- ✓ **Get the exact location.** With a sour gas call, find out exactly where the well is. Then find out which way the wind is blowing. Do this before setting up — or even asking for — roadblocks.
- ✓ **Get accurate readings.** Monitor the problem from a distance, rather than right at the well. Fumes travel by direct wind and by convection. From a distance, your monitor won't miss any fumes.
- ✓ **Don't assume anything.** A burning well may still be dangerous. A flare-out may be safe.
- ✓ **Set up a command post right away.** Let all responders know about the command post. Make sure they all report to the command post when they arrive.
- ✓ **Set up a common communication link at the command post.** A command post communication link allows all responders to stay in touch. Throughout the emergency, responders should let the command post know where they are and what they are doing.

Communicating with the command post guarantees that everyone is working as a team. People aren't going off in different directions or duplicating activities.

Communicating with the command post also promotes safety. The Calgary Fire Department uses velcro-backed name tags. Before entering a burning building, firefighters leave their name tags at the command post. If a name tag isn't picked up, the command post knows which firefighter may be in danger.
- ✓ **Communicate with the community.** Use alarms and warning systems. Keep the information up to date. Provide feedback after the emergency or during the postmortem.
- ✓ **Call on government agencies and private industry.** In every emergency, success depends on teamwork. Don't try to work alone. Draw on all available resources. Co-ordinate and co-operate throughout the emergency.

Hazardous Materials Technicians from the Calgary Fire Department arrived to back up the #2 HazMat response team. Emergency Medical Services crews were dispatched to stand by at perimeter locations. An employee of a local oilfield services company arrived with an inspector from Environmental Protection.

At the well site, the response crew got no readings for sour gas. But then #12 Squad and #22 Tank reported odors north of the well site. After meeting at the command post, responders suggested monitoring a second well — even though the well's flare was still burning.

The second well was to the west in another field. HazMat crews, along with the oilfield service company employee, masked up and approached the well site. There, they found the source of the problem.

The second well was venting gas faster than it could flare off the gas. A relief valve was opening occasionally, releasing sour gas. The crew began closing off the well.

The gas monitor showed hydrogen sulphide (H_2S) readings of nine parts per million (ppm). At nine ppm, sour gas does not pose a serious threat to public safety.

The occupational exposure limit for H_2S is 10 ppm. An individual can work in a sour gas environment for eight hours, providing the H_2S concentrations are 10 ppm or less. The short-term inhalation limit is 15 ppm. If the H_2S concentrations climb to 15 ppm, an individual can work in that environment for up to 15 minutes.

If the well was continuously releasing H_2S at 15 ppm or greater, responders would have to decide whether or not to evacuate the area. In this case — at nine parts per million — the best procedure was to advise residents to stay indoors.

After the crew closed off the well, the ERCB and Alberta Environmental Protection completed their investigation. It was a team effort all the way. And because of that team work the incident concluded successfully.

Teamwork hinges on the command post and the central communications link. Without communication, an emergency like this can quickly become complicated and difficult.

In this incident, the response team had a taste of how complicated a situation can get. In many emergencies, the complications arise because the radios of emergency services operate on different frequencies.

In this example, the Calgary fire department's communication system did not tie in with the RCMP's. For this reason, the Calgary department could not immediately contact the RCMP with the news that the situation was safe.

Unaware of this fact, the RCMP decided to evacuate part of the community. Fortunately, the Calgary Fire Incident Commander was able to reach the RCMP through the Chestermere Fire Department, which was helping with the evacuation. With the word that all was safe, the evacuation was halted.

Planning, then planning, and more planning

Clues to a “successful” emergency?

Leslie Beard

Manager, Public Affairs

Dow Chemical's Western Canada Operations

Planning for an emergency can appear to waste a lot of energy — especially when the chances of an emergency occurring are so slim. And yet in the midst of a major emergency, the planning you did beforehand usually saves the day.

Dry runs that put people's skills and training to the test are a key component of Dow Chemical Fort Saskatchewan, Alberta, site emergency planning. Every quarter, Dow arranges a different mock emergency — each time focusing on a different aspect of Dow's operations.

The dry run

On August 25 at 9:40 a.m., the fire and security public address system announced a Stage I fire at the vinyl plant. A Stage I mobilized the fire and security crew to stand by, ready to respond. A few minutes later, Stage II was announced. The fire and security crew immediately arrived at the fire, with the fire chief becoming the on-scene commander.

While all this was going on, other employees who play critical support roles assumed their respective positions. The emergency operations centre, an underground office facility separate from the plants, quickly filled with key senior management representatives. The emergency co-ordinator, department managers and

people from product flow, environment health, maintenance and communications maintained links with the public and supported emergency responders in the field. In addition, the traffic control group blocked traffic entering the plant site. The group also prevented vehicles already on the site from moving into the vicinity of the fire.

In the emergency operations centre, the emergency co-ordinator was in constant radio contact with the on-scene commander. Environmental services people began monitoring the scene. They stationed employees on public roadways to measure if any chemicals were escaping into the environment.

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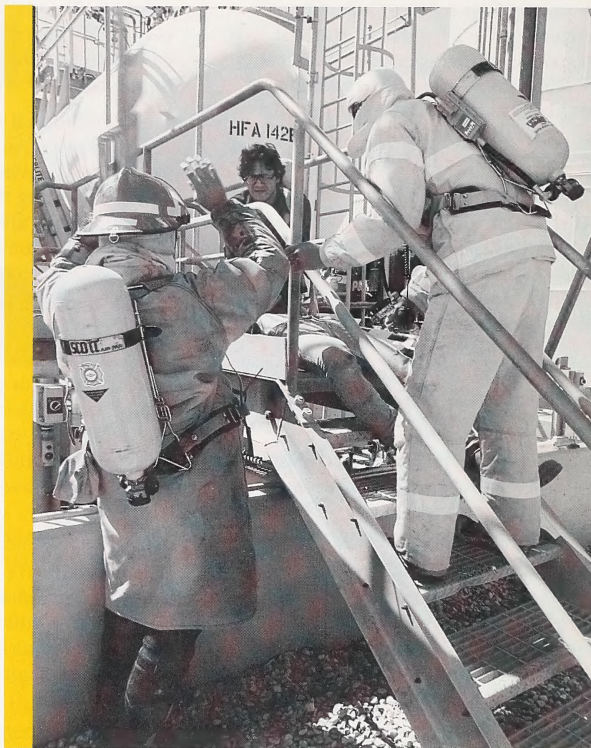
Security also activated an extensive public notification process. The Fort Mutual Aid Plan – the region's industrial emergency response group – and Alberta Public Safety Services were informed. Although Dow has not found it necessary to call different groups for assistance in the past, the potential always exists. These groups are also important links back into the community in the case of media calls and public concerns.

Communications people tested their skills and those of senior management by having students pose as media reporters. To handle incoming calls from concerned relatives or friends, a 10-line telephone Information Centre was set up strictly to deal with public inquiries. In another area, two communications people managed a media centre where news conferences and media interviews are held. Senior managers with in-depth knowledge of the incident were drilled with potential controversial media questions.

After every dry run, a list is made of opportunities to improve. In the case of the August 25 dry run, Dow identified some key areas. Those who close the highway must respond faster. Groundskeeping employees working around the site need proper notification. A contingency plan must be in place in case radio communications equipment fails. And senior management need ongoing media training.

Responsibility for addressing all action items rests with Dow's Community Awareness/Emergency Response (CAER) team. Led by a senior manager, this group is made up of representatives from functions that play the most critical roles in planning and handling emergencies.

Dow Chemical Canada Inc. operates nine major plants, representing Canada's largest petrochemical complex in Fort Saskatchewan, 30 kilometres northeast of Edmonton.



Dry runs give trained employees an opportunity to use the proper protective gear.

Dow Chemical Canada Inc.

Memories are made of this...

The stories are legendary of companies which have all the latest technical know-how in emergency planning but are remembered only for their inability to communicate during a crisis. The following are a few simple rules on communications that have repeatedly proven to work during a crisis situation.

- ✓ Identify your spokespeople well before an emergency and make sure they have been trained in news media relations.
- ✓ Regardless of how little information you have during an emergency, tell the public and news media what you can. You'll be appreciated for it.
- ✓ No Comment!: Never say it. If you do not have the answers, make a commitment to get back to the

person as soon as possible.

- ✓ Remember that communicating goes beyond the news media. Have a system in place to handle calls from concerned relatives and local residents.
- ✓ Have a group of people trained to handle telephone calls under potentially high-stress situations.
- ✓ Always make sure you have an "understudy." Emergencies don't happen when it's convenient and when everyone in your department is available. Make sure you have people fully trained to step in if one of your key communications people is not available. That applies both to the communications function and also within the senior management ranks.

Mutual aid goes regional

A bright new idea

Last March, about 50 people filed into Gus' Steak and Rib House in Fort Saskatchewan to discuss a bright new idea in emergency response: mutual aid on a grand scale.

No strangers, the group had worked together for years in different ways to improve emergency response in the Fort region. Together, they represented major industry, emergency responders, Alberta Public Safety Services and nine municipalities. They included officials from the City of Fort Saskatchewan, and the neighbouring municipalities of Strathcona County, the County of Lamont, the MD of Sturgeon #90, Bon Accord, Gibbons, Morinville, Legal and Redwater.

Over lunch, the group decided to take their past efforts one step further. They agreed to pool their resources to form a regional mutual aid organization called the Northeast Region Community Awareness and Emergency Response, or Northeast Region - CAER for short.

"They started signing up right then and there," says Garry Dlouhy, plant superintendent for Procor LPG Storage Inc. and chairman of the Community Awareness and Emergency Response (CAER) Committee for the Fort Saskatchewan Regional Industrial Association (FSRIA). "We said there would be defined roles and responsibilities. We told them that membership meant active participation and sweat equity."

In return for that sweat equity, the region is expected to gain a more efficient and effective emergency response capability that avoids duplicating efforts. Northeast Region - CAER will pool together an incredible wealth of resources, equipment and manpower, some of it world-class. The new organization



Industry and emergency responders in nine municipalities are co-ordinating plans and resources in the Fort Saskatchewan region.

will also co-ordinate emergency planning, training and regular mock disaster exercises on a regional basis.

After it's up and running this January, Northeast Region - CAER is expected to replace a number of emergency response organizations, including two mutual aid groups: Fort MAP, Sturgeon MAP plus FSRIA - CAER. These groups will remain until everyone is certain that Northeast Region - CAER is ready to take over. One group that will not be replaced is the Fort Saskatchewan Emergency Preparedness Advisory Committee, but some of its activities will be rolled into Northeast Region - CAER.

The new organization is largely the result of growing co-operation between communities and industry in the area. The catalyst in the whole process was the Fort Saskatchewan Regional Industrial Association (FSRIA), a non-profit group of 19 major manufacturing and processing companies in the area.

Back in 1991, the association began looking for community partners to help achieve the kind of excellence needed to be competitive in a global marketplace. The association's Community Awareness and Emergency Response (CAER) Committee took the lead, forging partnerships with groups such as Fort MAP and the City of Fort Saskatchewan.

"We noticed that all these organizations were doing the same thing," says Dlouhy. "It raised the question, 'why not pull these organizations together into one regional organization?'"

Dlouhy and the CAER committee went to work, including Kevin Meany, CanadianOxy, Calvin Gyben, CanAmera Foods, Dave Dunn, Dow Chemical Canada Inc., Stan Norlander and Bob Gerow, Sherritt Inc., and Paul Riopel, an emergency management response consultant.

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CAER formed a strawman group to look across North America for models for a new regional organization. It found them in Sarnia and Leeds and Grenville Counties in Ontario, and in Houston, Texas, and borrowed elements to use in Alberta.

Northeast - CAER will be headed by a board of directors including senior managers from industry and government. The board is expected to meet once or twice a year to decide policy and keep the organization on track. A planning and administration

group of eight managers from industry and the area's municipalities will report to the board. It will be this group's job to manage the new organization.

There will also be six committees: public affairs, training, emergency planning, hazard and resource identification, security and communications.

As January draws closer, Northeast Region CAER is working out final details such as operating costs and the price of membership. To belong to Northeast Region - CAER, a

member must be capable of responding to emergencies or present some risk to the area. Any municipal agency in the geographical area can also join.

"One of the great benefits of this regional co-operation will be a greater level of community awareness of emergency procedures," concludes Dlouhy. "We'll be able to do a better job of educating people about safety and how to react in an emergency."



What's the latest?

APSS training for responders

The First Responder Course is eight hours long, offered as a one-day course or over two evenings. Its prerequisite is a three-and-a-half hour Dangerous Goods Introduction course.

The course meets (and in some areas exceeds) National Fire Protection Association (NFPA) standards. RCMP, police officers, firefighters, emergency medical personnel and industry – a broad cross-section of participants – have received the course very well.

In 1992, APSS restructured the Second Responder Course to better accommodate the users' specific needs. The classroom portion dropped to two weeks from six weeks. A home study and practise-based component based on NFPA Standards follows the classroom portion. The new format has been very successful in both Edmonton and Calgary. Edmonton will be sponsoring another course this December.

The changes make the course more affordable for people all over Alberta, across Canada and in other parts of the world. The need for this type of training is critical and the demand for

it is increasing throughout the world.

Recently, the U.S. military asked APSS to deliver this course in Okinawa, Japan. Dr. Uwe Terner and I were in Japan from October 12 - 29, 1994, teaching the course. The learning worked both ways and better prepared us for effective course delivery in the future.

Where does APSS go from here? That's where the 'new and improved' comes in. These courses, like all our courses, are living entities. As such, they are subject to evolution's constant change. Although the core elements may not vary much, the challenge to improve will always exist. APSS's current project is to improve the formatting and packaging of these courses to better serve the participants' needs.

Emergency Response training with a made-in-Canada label will be well recognized throughout the world, and APSS is willing to do its share.

Randy Scott
Training Officer, APSS

"New and improved" are words that apply to the APSS Training School's responder courses. Both the new First Responder Dangerous Goods and the improved Second Responder Dangerous Goods courses have met their objectives and exceeded APSS's delivery expectation.

VIEWPOINT

Who's in charge? revisited

Editor's Note: Shaun Hammond has raised the question of who's in charge in two past issues of Insight. Now he's revisiting the topic, this time to look at parallel and cross functions as the crux of the question.

Shaun Hammond
Executive Director,
APSS Dangerous Goods Control Division

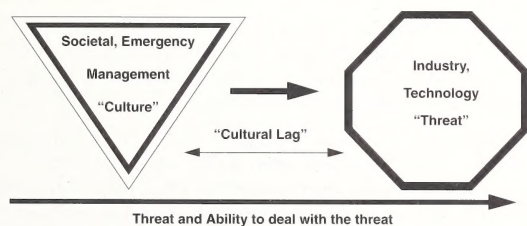
There are several aspects to the old question of who's in charge at an emergency? In a recent article, Neil Britton, a Canadian Commonwealth Visiting Fellow at the University of Manitoba, reviewed several aspects of emergency management.⁽¹⁾

Britton proposes that:

*effective mass emergency and disaster management, and hence societal protection, requires a close fit between the **state of risk** (i.e. the degree of harm from all likely natural and technological hazards capable of producing widespread social disruption) and the **state of hazard management** (i.e. threat reduction and amelioration through planning, preparedness and response).*

He concludes that these two factors — state of risk and the state of hazard management — are usually at variance. Society's adaptive culture and emergency management practice lag behind the threats that innovation and technological advances pose.

Figure 1



If you refer to figure 1 above, British researcher Barry Turner confirms Britton's conclusion. Turner⁽²⁾ analyzed the situation in the United Kingdom and concluded:

at present, most emergency service organizations cope with the routine and the abnormal incidents they are faced with. However it is poor management to assume that existing procedures will handle future problems and provision for future flexibility of response needs to be anticipated in emergency service organizations.

Britton proposes a possible solution. For a fully integrated emergency management process, develop a "disaster relevant subculture for technological hazard management."

Figure 2



I believe we have already developed a "technological hazard management" subculture in Canada. In effective emergency management, a challenge for all responders is to achieve flexibility and reach the point of integrated response management. Or, to coin a new acronym in this area, Flexible Integrated Response Management (FIRM).

In her analysis of the fire in Saint-Basile-le-Grand, which involved PCBs, Helene Denis⁽³⁾ states that there are three types of disaster management issues.

Technical issues arise from the source of the danger, such as firefighting and victim rescue.

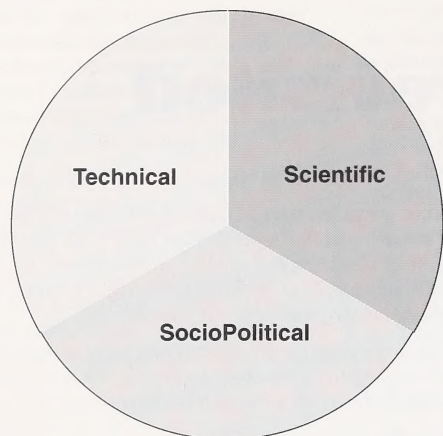
Sociopolitical issues are the social issues, involving the direct or indirect needs of victims and the rest of the community. Examples are shelter, evacuation, compensation and security of property. Sociopolitical issues include political issues or the relationship between community and elected representatives during the crisis.

The Saint-Basile event, concludes Denis, gave rise to the third type: **scientific issues**. These relate to three issues of health risk: environmental health risk, agriculture and human health risks. They involve sampling, analysis and data interpretation in these three areas. Scientific issues create uncertainty and challenge the incident management team.

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Figure 3



Emergency Management - Issues Pie

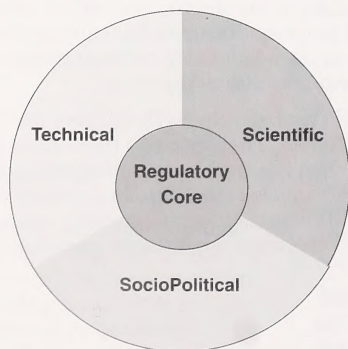
As to specifics of incident command and control or emergency management, the PCB fire at Saint-Basile presented significant challenges to the response co-ordinator. Denis interviewed 84 persons who "managed the crisis." These large numbers of responders turned the disaster management process into a "super task force."

During a response to a chemical spill, numerous issues arise. Emergency response management relies heavily on open communication and co-ordination, a project management approach. Mutual understanding and communications in the co-ordination group are factors that lead to a successful conclusion of the problem. (See figure 4)

From Alberta experiences, one series of issues appears to be missing from this analysis: the **statutory or regulatory issues** that spring up at each major incident. They usually take the form of who has jurisdiction or who has the

Figure 4

Emergency Management - Issues Pie



- Regulatory / Statutory Core Overlay

statutory authority to act, investigate, direct or respond. In the three areas Denis described, regulatory or statutory concerns probably cause most of the issues. They could be called the "regulatory core" of these issues. (See Figure 4)

How does this occur? The Major Industrial Accidents Council of Canada (MIACC) reviewed the Canadian Environmental Protection Act (CEPA) in 1994. MIACC wanted to recommend improvements to the environmental aspects of emergencies.⁽⁴⁾

The task force and working groups looked at parallel versus crossfunctional response mechanisms, looking for overlap and duplication. In a slight variation of Denis's theory, the parallel versus cross-functional mechanisms could lead to co-ordination issues and problems.

Here the issues were defined as:

- **Social** (the immediate fire, police and medical response, evacuation)
- **Technical** (the technical aspects of the chemical involved, containment, offloading, transport, occupational health, and fine technical response details)
- **Environmental** (the longterm effects, recovery, restoration, waste disposal and monitoring aspects)

In the parallel response mechanism, each party has a statutory or regulatory requirement or authority to do something. As shown in Figure 5, the parallel mechanism shows the authorities having primary responsibility and those having a secondary or supportive role.

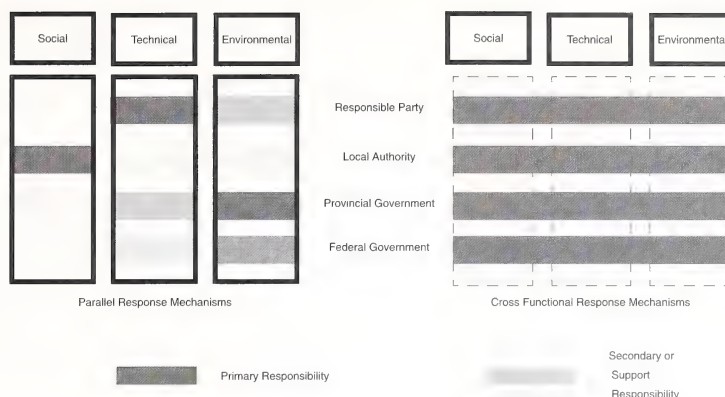
For example, under the *Transportation of Dangerous Goods Act*, the consignor or the carrier has an obligation or may be directed to do something by an inspector. If a death is involved in the accident, the coroner or police may be involved. If a workplace injury or fatality has occurred, the occupational health and safety authority has a requirement to respond and investigate.

All of these requirements lead inevitably to co-ordinating and scheduling issues at the emergency site, requiring effective on-site co-ordination by the management team or the team leaders and the site co-ordinator.

A much better mechanism appears to be the cross-functional mechanism. Each team and team leader have an acute awareness of each area. Each team may even have members skilled in the different areas. Each team can work to ensure that all the needs and priorities are addressed in a co-ordinated manner.

Without effective management, co-ordination and flexibility on the part of the various responding teams and team leaders, issues will arise. In the worst case, several responses to the same incident will occur independently at the same time (the worst scenario under the parallel response mechanisms).

Figure 5



As an example, an industry technical response team may be satisfied that the risk to itself (and hence other responders) is acceptable given certain operating requirements. Thus their teams work with certain protective clothing. The fire-health-police response team may consider the hazard differently and decide on evacuation, a greater degree of personnel protection or even restrictions on access to the incident site on the part of responders. The problem will not be solved without flexibility on the part of the teams, and good integrated overall response management, and issues will arise and get worse.

Each team leader and his organization has to be flexible and adjust their response to the needs and objectives of the other organizations working to resolve the incident. Everyone must work together as an integrated response management team for the incident to be resolved to the benefit of all the parties.

So who's in charge? Undoubtedly the team leaders will have to take charge of certain operations at various times during the response. But there has to be effective co-ordination of the scheduling of these operations and it is here the emergency site manager (or co-ordinator) has to use his or her skills. (See figure 6)

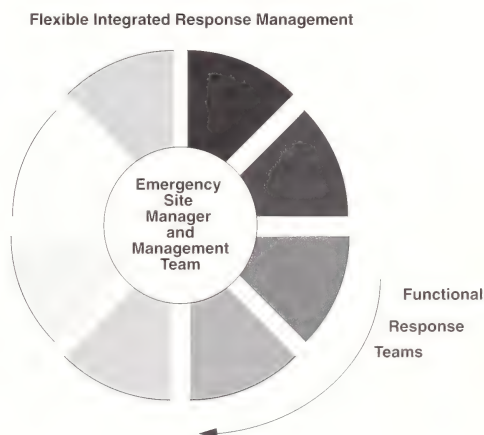
The co-ordinator and his management team of advisors from the responding agencies should be scheduling, categorizing, adjusting, informing — a host of functional responsibilities that can never be assigned to one human. That person just does not exist.

Call the person a crisis manager, an on-scene commander, an emergency site manager — the role has to be one of facilitator, listener, communicator, and above all a team leader. The person will, in all likelihood, be defined in a local emergency plan, have had training in site co-ordination and management and will report to the local authority.

Each responding team (or "subculture") must work within the team management framework to overcome the cultural lag, to maximize the resources at the scene, to use their statutory authority and their expertise effectively within the framework to ensure a satisfactory conclusion to the incident.

They have to be a FIRM team - a flexible, integrated response management team.

Figure 6



Footnotes

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Prosecutions 1992-93

Editor's note: This summary of recent prosecutions has been included at the request of our readers. If you have any comments about this, please let us know.

The focus of the Inspection Branch of Dangerous Goods Control Division remains one of assisting industry in its compliance with the dangerous goods legislation. Prosecution remains an optional tool which the Inspection Branch uses to enforce the Regulations.

The following list details some of the prosecutions and the fines over a two month period.



Sample of charges laid within the Province of Alberta under the Transportation of Dangerous Goods Control Act and Regulations during the Months of May/June 1993

Carrier/Shipper	Court location	Regulation/Act	Charges	Fines
MAY				
Carrier	Calgary	Regulations	Documentation	\$400.00
Carrier	Edmonton	Regulations	Documentation	\$400.00
Carrier	Edmonton	Regulations	Documentation	\$ 400.00
Carrier	Edmonton	Regulations	Documentation	\$ 400.00
Shipper	Edmonton	Regulations	Documentation	\$ 600.00
Carrier	Calgary	Act	1 charge	\$ 400.00
Carrier	Edmonton	Regulations	Safety Marks, Training	\$ 200.00
				1 charge withdrawn
Shipper	High Level	Act	1 charge	\$ 400.00
Carrier	Calgary	Regulations	Safety Marks	\$ 600.00
Shipper	St. Paul	Regulations	Documentation	\$ 400.00
Shipper	Edmonton	Regulations	Training	withdrawn
JUNE				
Carrier	Ft. McMurray	Regulations	Safety Requirements	\$ 100.00
Carrier	Calgary	Act	1 charge	\$ 700.00
Carrier	Calgary	Regulations	Training	\$ 200.00
Carrier	Edmonton	Regulations	Training	withdrawn
Carrier	St. Albert	Act	1 charge	\$ 400.00
Carrier	Edmonton	Regulations	Training	withdrawn
Carrier	Calgary	Regulations	Training	withdrawn
Shipper	Calgary	Act	1 charge	withdrawn
Shipper	Edmonton	Regulations	Documentation	withdrawn
Shipper	Wetaskiwin	Act	3 charges	2 dropped \$ 400.00

Emergency Response Materials and Recent Acquisitions

A selection of materials available from the Alberta Public Safety Services Library

Compiled by Teresa Richey, APSS Librarian

To borrow the material listed, send an interlibrary loan form (make the request through your local or company library) to Alberta Public Safety Services (APSS), 10320-146 Street, Edmonton, Alberta, Canada, T5N 3A2.

Materials located in our Co-ordination and Information Centre (CIC), the Government Emergency Operations Centre (GEOC) or our Reference Collection (REFERENCE) cannot be borrowed but can be referred to in the Library.



CPA-IPAC guidelines for the preparation of public safety emergency response plans for sour gas drilling, completion and servicing. s.l. : Canadian Petroleum Assoc., 1991. 59p.

TN 880.2 .G84 1991, MAIN

Dangerous goods initial emergency response guide 1992. Transport Canada. Dangerous Goods. Ottawa : CANUTEC (Canada), 1992. 217p.

HE 199.5 .D3 D362 1992, REFERENCE

Denning, Elaine J. *Hazardous materials as secondary results of flooding : a case study of planning and response.* Boulder, Colo. : Natural Hazards Research and Applications Information Center, 1992. 20p.

HV 622 .D46 1992, MAIN

Guiding principles for chemical accident prevention, preparedness and response. OECD Environment Directorate. Paris : OECD, 1992. 123p.

TP 155.5 .G841 1992, MAIN

Guidelines for industry emergency response contingency plans. British Columbia. Environmental Emergency Services Branch. Victoria : B.C. Environment, 1992. 17p.

HV 551.5 .C2 B74 1992, MAIN

The incident command system [videorecording] : professionalism in managing emergencies. s.l. : Federal Emergency Management Agency, n.d., 1 cassette (VHS), 360 min., col., 1/2 in.

HV 551.3 .I52, A/V MAIN

Master planning and multijurisdictional incident command [videorecording]. s.l. : Federal Emergency Management Agency, 1987, 1 cassette (VHS), 120 + 94 min., col., 1/2 in.

TH 9503 .F45 p.1-2, A/V TRNG

Medical waste management and disposal. U.S. Environmental Protection Agency and V.J. Landrum, et. al. Park Ridge, N.J. : Noyes Data Corp., (Pollution technology review 200). 1991. 541p.

RA 567.7 .M44 1991, MAIN

Perry, Ronald M. and Joanne M. Nigg. *Emergency preparedness and response planning : an intergovernmental perspective.* Edited by James P. Cooper. Tempe, Arizona : Office of Hazard Studies, (Working paper series 109). 1986. 26p.

HV 553 .U6 P47 1986, MAIN

Proceedings ER'91. The technological response to dangerous substances accidents 28-30 May 1991 Calgary, Alberta, Canada. Major Industrial Accidents Co-ordinating Committee. s.l. : [Alberta Public Safety Services], 1991. 474p.

T 55.3 .H3 D361 1991, MAIN

Transportation of Dangerous Goods Act, 1992. "Behind the words" : an informal guide to the 1992 Act for inspectors. [Ottawa] : Transport Canada, 1992. Various paging.

KE 3763 .A2 1992, MAIN

Dangerous Goods Inspectors

A Trucker's Resource

Peggy Berndt
Information Officer, APSS

Dynamic, enthusiastic, caring and dedicated are only a few words that can be used to describe the seven dangerous goods inspectors who work for Alberta Public Safety Services. But according to Elbert Manderville, APSS's Edmonton senior dangerous goods inspector, a few grey hairs and an informal style are prerequisites for the job.

"It's our job to strip off our jacket and tie and work with the trucking industry to achieve compliance of the Transportation of Dangerous Goods Control Regulations," said Manderville in a recent interview with Insight. "I leave my tie hanging on the coat rack for visits to headquarters. If we expect to work well with the trucking industry, we have to be like the truckers."



Left to right – Bill Simington and Elbert Manderville stop to talk with a local trucker about the TDG Regulations.

For dangerous goods inspector Bill Simington, diplomacy and common sense are extremely important when dealing with clients. "We won't be effective if we give warning notices for minor infractions to the regulations and we don't prosecute on attitudes but actual serious offenses. We must go after the meat of the problem if we want industry to work as part of our team."

The role of the inspector has changed since the dangerous goods program started in 1983 and it hasn't become any easier. Industry is a lot more knowledgeable today, so the new breed of inspectors must know their job better and deal with industry in a professional, realistic manner. They must be well prepared to answer tough questions and they are often called upon to interpret the regulations.

"The role of a dangerous goods inspector is a difficult one as an industrial client service agent in an inspection advisory role," says Shaun Hammond, executive director of the Dangerous Goods Control Division at

APSS. "Each inspector must be flexible to meet the needs of the clientele in his region. We will have to continue to look at the way we do business in order to meet the new industry profile."

Call us

A dangerous goods inspector can help:

- explain TDG regulations
- give help on compliance
- speed up the permit process
- work with shippers to make the trucker's job easier

For further information, contact the DG inspector nearest you.

Edmonton 403-422-1909

Elbert Manderville, Bill Simington

Calgary 403-297-6440

Don Clark, Terry Wallace

Grande Prairie 403-538-5295

John Oman

Lethbridge 403-381-5222

Adam Borys

Red Deer 403-340-5102

Dave Doll

In Alberta, to be connected toll-free dial 310-0000

Inspectors facility checklist

When inspectors check a facility, they want to know:

- do employees have proper training?
- do the material safety data sheets (MSDS) reflect the product packaged?
- do the packages have the proper safety markings?
- do the correct contact names and telephone numbers along with shipping names, product packagings, classes and priorities appear on documentation for past shipments?

Not only has the role of the inspector changed, it can differ from day to day and region to region.

As part of an Alberta team responsible for ensuring dangerous goods are transported safely on Alberta roadways, APSS dangerous goods inspectors wear many different hats to get their job done. On any given day, they might be an investigator, advisor, or witness in court. Due to different clients, the inspectors can also wear different hats in different regions. In Edmonton, for example, inspectors focus on incident investigations because most of the major trucking companies in the province are based in the area. In contrast, the Lethbridge inspector concentrates his efforts on facility inspections.

One way the role has changed is that inspectors can now trace individual drivers and not just companies who fail to comply with the regulations. In today's economy this is important because trucking companies are hiring part-time or temporary drivers and it is essential to deal with the compliance issue at the grassroots level.

While enforcement can be an effective way to deal with a non-compliance issue, it is not the only way. Civil liability, public image and the cost of clean-up encourage industry to comply. Education of carriers and law enforcement agencies is an essential element in the compliance equation and the APSS Training School plays an extremely

important role here. In addition to training industry and government officials on transporting dangerous goods, Dr. Uwe Turner, a member of APSS's training team, provides an invaluable consulting service to the inspectors.

"The answer to the safe transportation of dangerous goods in Alberta is though compliance, but I don't think you can go into a company and swing a big axe," says Manderville. "You have to give them an opportunity to be in compliance. I truly believe industry wants to comply, they just need us to remind them."

Fighting tank standards Oil transporters win a battle but lose the war

Don Bertrand
Lloydminster Heavy Crude Services Ltd.

The heavy oil transportation industry felt confused, bewildered, frustrated and angry. Back in 1987, the Canadian Standards Association (CSA) had released the Preliminary Standard B-620-1987. The 106-page B-620 standard laid out new rules for highway tanks and portable tanks carrying dangerous goods.

The standard had slipped many transportation people's notice. Back in 1987, the heavy oil transportation industry was still reeling from five of the worst economic years in heavy oil

history. Short of people, time and money, transportation companies remained ignorant of the B-620 standard.

Then in 1993, manufacturers began alerting owners ordering new equipment. Several owners organized a telephone blitz and set up a meeting for October 23, 1993. About 60 oil companies and transportation representatives attended this first meeting. Later, this group became the Western Crude Oil Production and Transportation Association (WCOPTA).

At the meeting, Gordon Goerz of Gibson Petroleum in Edmonton

enlightened everyone about the B-620 problem. Advanced Engineered Products of Regina also explained the technical aspects of the new code. A committee of 12 volunteers from industry and transportation agreed to lobby the Department of Transportation (DOT). The committee would try to convince the DOT that B-620 created problems.

The problems

Heavy oil transporters had problems with the fitness testing methods in the new standard. How often would tanks have to be tested? Who would

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Don Bertrand wants small business consulted before new standards are developed for the heavy oil transportation industry.

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do the testing? How many testing facilities would there be? Where would they be located?

B-620 gave technical data for new tanker construction. Also, with B-620 existing equipment would have to be retrofitted. All tankers needed safety relief devices for venting and internal emergency flow devices. The emergency flow devices would be controlled from two locations by remote. The thermal couplers on the devices would automatically activate at 250 degrees Fahrenheit.

The major concerns were the venting and internal emergency devices. First, in heavy oil, these devices did not exist in the required sizes. Second, these devices would not work well with crude oil. Crude oil contains varying percentages of water, which would cause freezing problems. Also, crude oil has other contents which would cause the devices to foul.

The process

No one in the group had any previous experience with a problem like this. Therefore, it was difficult to know where to start. Since this looked like a political problem, that seemed like a good place to begin. The group contacted all federal and provincial governmental representatives, then civil servants at both levels.

The group also got local organizations involved. Byron Bailey of the Lloydminster Economic Development Authority organized the Chamber of Commerce, the mayors of all the surrounding villages and towns, as well as the rural municipalities.

With more conversations and meetings, it became clear that at the most people knew very little about our business and thus couldn't understand the problems. At this point, we commissioned VICOM to produce a video on the industry and its peculiarities. This was a major decision, as it used about 80 per cent of our funding — funding the group had raised from its own members.

Whenever more than two people were willing to listen, group members

showed the video and spoke about the concerns. For several months, a few committee members worked continually on this process. By the end of January 1994, there appeared to be some headway and some inroads into the bureaucracy.

Both the Alberta and Saskatchewan governments saw the impact these new regulations would have on the energy sector. Both offered excellent support and intervened in Ottawa on the group's behalf.

The Western Crude Oil Production and Transportation Association — or WCOPTA — was then invited to send two representatives to sit on the CSA Committee dealing with revisions to the B-620 Standard. Don Mills from Husky Oil, Gordon Goerz from Gibson Petroleum and myself joined the committee.

At the initial February 22 meeting, WCOPTA again faced ignorance of the heavy oil industry. The committee also showed very little interest in the industry. However, crude oil and asphalt did become a separate standards committee and a preliminary standard for crude tankers

was developed. This preliminary standard was to be presented to the main CSA committee in Toronto on June 13, 1994.

The main committee seemed to accept the proposed new standard. Next, the proposal was to be drafted into legal language and inserted into the B-620 standards. Final acceptance will be sought at the next CSA meeting in November.

Fighting B-620 took teamwork, perseverance and patience. And still, even though the crude oil subcommittee won the battle, it seems to have lost the war. Transporters still face substantial costs. Even new equipment built to a MC-306 standard will cost about \$3,800 to retrofit. Older equipment will cost more.

In the future, perhaps the teamwork could start a lot earlier. Instead of fighting to change what is already on paper, small businesses and Ma and Pa operations could be part of the process from the very beginning.

Lloydminster Heavy Crude Services Ltd. is a transportation company specializing in heavy or crude oil.

New agreement streamlines TDG in Alberta

On August 15, 1994, an agreement on the administration of the Transportation of Dangerous Goods Act in Alberta was signed by the province and the federal government. This historic agreement lays the foundation for streamlined administration and enforcement of all the dangerous goods legislation in the province.

The province will undertake all inspection and enforcement responsibilities for the road mode, while Transport Canada will continue to administer the requirements for the air, rail and marine modes.

Significantly, Canada and Alberta have agreed that provincial inspectors will now undertake the inspection and follow-up of the emergency

response assistance plans in Alberta. The two orders of government have agreed to co-ordinate their regulatory, enforcement activities, and emergency response functions. This will ensure uniformity between the federal and provincial requirements and provide a channel for industry input into the development of amendments.

The agreement effectively reduces overlap and duplication of activities in the area of inspections and streamlines the process of consultation between the governments. It will greatly assist the consultation between Alberta industries and the Dangerous Goods Control Division of Alberta Public Safety Services.

Transporting biomedical wastes

What are your views?

by Dr. John A. Read
Director General
Transport Dangerous Goods
Transport Canada

In July, Transport Canada circulated a draft amendment schedule to the Transportation of Dangerous Goods Regulations titled "Biomedical Waste - Amendment Schedule L". As a result of the many comments received, we have decided to reopen the topic for general review.

This paper is intended to clarify the current regulatory situation and set out the changes we are considering. The immediate result is that the draft Amendment Schedule L of July 1994 is being set aside. It will be rewritten following the receipt of comments, and a discussion of these, which this paper is intended to generate.

Current Situation

On April 6, 1994, Amendment Schedule No. 16 to the Transportation of Dangerous Goods Regulations was published in the Canada Gazette, Part II. This established that certain infectious substances are regulated for transport. For the remainder of this article they will be referred to as the **controlled infectious substances**.

The amended regulations apply to controlled infectious substances regardless of the reason for the transportation, e.g. to a lab for analysis or as a waste for disposal. However, the department recognizes that infectious substances can be neutralized (made non-infectious) or

weakened (made less infectious) through natural or artificial treatment. For example, a specific culture may be neutralized naturally through exposure to a normal environment or through mixture with other waste. In addition, a specific culture may be neutralized artificially through physical (e.g., heat) or chemical means.

Consequently, the amended regulations apply only to waste containing controlled infectious substances that have not been neutralized. This raises the question of who should decide if a certain waste contains non-neutralized controlled infectious substances.

Under the TDG Program, it is the responsibility of the consignor to determine the nature of any goods to be shipped. In the case of waste, the consignor must decide if there is a non-neutralized controlled infectious substance present. If there is, the conditions established in Amendment Schedule 16, referenced above, must be complied with.

Transport Canada is considering modifications to the current regulations concerning controlled infectious substances when these are shipped as waste, or mixed with general waste.

Although the phrase "biomedical waste" appeared in the title of the July draft of Amendment Schedule L, it will no longer be used as its common meaning includes much more than what is regulated or intended to be regulated by Transport Canada.

Observations and Requests for Comments

1. Neutralization

Calling a controlled infectious substance a waste does not alter its infectious properties. Handling it as a waste, e.g., removing it from its controlled environment or mixing it with other wastes, may neutralize or reduce its infectious properties. Comments are requested.

2. Packaging

- a) The quantity of Risk Group IV controlled infectious substances generated as waste in Canada is thought to be *very small*. For infectious substances in this group that are not neutralized, it is expected that keeping them segregated and following the requirements of Amendment Schedule 16 would not be difficult to satisfy. Comments are requested.
- b) The quantity of Risk Group III controlled infectious substances generated as a waste in Canada is thought to be *small*. For infectious substances in this group that are not neutralized, it is expected that keeping them segregated and following the requirements of Amendment Schedule 16 would not be difficult to satisfy. Comments are requested.
- c) The quantity of Risk Group II controlled infectious substances generated as waste in Canada is significant, to the point that keeping the controlled infectious

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substances in this group segregated may not always be feasible. However, for this group the packaging can be any form of containment that the consignor believes would prevent any release that could constitute a danger to life, health, property or the environment during normal conditions of handling and transport (ref. Section 7.21 of the TDG Regulations). Packaging this form of infectious waste by itself or mixed in with general waste would not be difficult to satisfy. Comments are requested.

3. The Waste Manifest (Documentation)

- a) A waste manifest (documentation) is currently required for every shipment of regulated waste greater than 5 kg or 5 litres. Consideration is being given to raising this limit for shipments of waste containing controlled infectious substances from Risk Group II only. Comments are requested.
- b) Consideration is being given to allowing a multiple collection

provision so that only one waste manifest (document), administered by the transporter, need be involved in the case of multiple pickups. Comments are requested.

- c) Consideration is being given to exempting from the requirement for a waste manifest (documentation) certain categories of generators who transport waste containing controlled infectious substances in their custody to a central handling facility (e.g. veterinarians, Victorian Order of Nurses, doctors). Comments are requested.

4. Safety Marks

Consideration is being given to establishing a placarding requirement for large (to be determined) volumes of waste containing controlled infectious substances with the possible exclusion of those shipments identified in 3 c) above, and also certain designated classes of vehicles (e.g., Red Cross mobile donor clinic vans and dedicated delivery vehicles which transport from one hospital to another on a rotating basis within a limited area as defined by distance or by permissible highway speeds within

the area). Comments are requested.

5. Sharps

Consideration is being given to regulating all used sharps. Comments are requested.

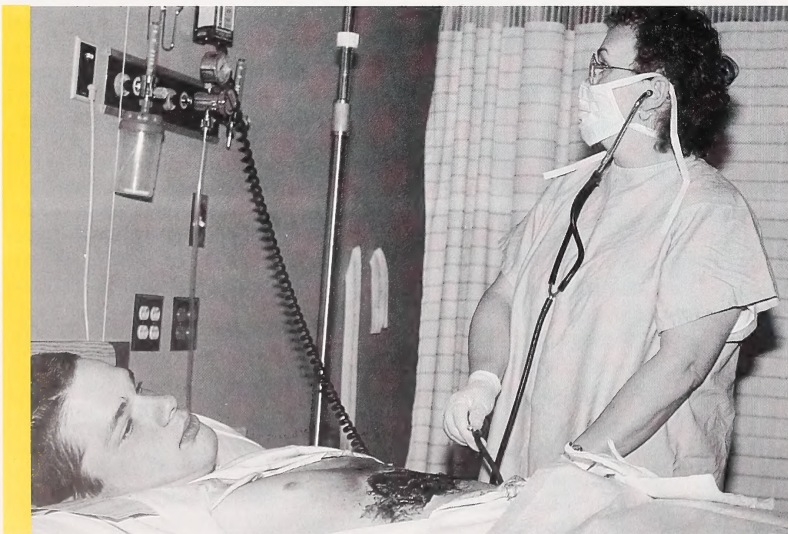
Consultation Process

Comments on the preceding are requested in writing, addressed to:

Mr. J.R. Monteith
ASDD, 14th Floor, Canada Bldg.
344 Slater Street
Ottawa, Ontario
K1A 0N5

or can be sent by FAX: 613-993-5925, or electronically through the Transport Dangerous Goods Special Interest Group (SIG), which has been established on Free-Net (select GOVERNMENT CENTRE/FEDERAL/TRANSPORT CANADA/TRANSPORT DANGEROUS GOODS DIRECTORATE).

The advantage of using the SIG is that all comments received will be available for viewing by anyone who connects with the SIG. In addition replies to any requests for further information of a specific or general nature will be present. For specific information on how to access this SIG, please contact Scott Smith (613-998-9606) or Melanie Saikaly (613-998-6538).



Down the road: A new draft amendment for transporting biomedical wastes will be rewritten based on your feedback.

Product Profile



Sodium chlorate

Sodium chlorate (NaClO_3) does not occur naturally. Instead, about nine companies in 13 plants across Canada (principally in Quebec and B.C.) manufacture the product. The estimated annual production is more than 300,000 tonnes. The bulk goes to pulp mills and the remainder is exported.

Sodium chlorate comes in two forms, solid and liquid. The dangerous goods United Nations (UN) numbers for the solid form (white crystals to slightly yellow lumps) is UN 1495, and for the liquid (solution) is UN 2428.

Uses

Sodium chlorate is a more stable way to transport chlorine dioxide bleach. It is also a bleaching agent. Through a chemical reaction, it can give off chlorine dioxide, a bleaching agent used in paper production. Chlorine dioxide is used immediately, since this gas is highly reactive itself. Sodium chlorate is also used in ore processing, in leather tanning and finishing and in herbicides and defoliants. It is used to recover bromine from natural brines and as a textile mordant.

Principal properties

Sodium chlorate can be made from sodium chloride. Hot, concentrated acid solutions of sodium chloride undergo electrolysis. The reaction causes sodium chlorate to precipitate in crystal form.

The product has the following principal properties.

- It is a powerful oxidizing agent. This property is used in the manufacture of explosives, matches, flares and pyrotechnics, that is, fireworks.
- It is toxic by ingestion. The amount required to cause death does not meet the criteria for class 6.1 poisonous substances.
- Prolonged skin contact may cause irritation.
- High concentrations — 1,000 up to 10,000 milligrams per litre — have been found to be harmful to aquatic life. These levels would require it to be classified as an environmentally hazardous substance.

Explosive reactions

The chemical's oxidizing ability has made it a class 5.1. When contaminated with commonly used products, a flame or spark (such as a static discharge) can cause it to explode. Agricultural or horticultural products (peat moss, powdered sulphur, sawdust, urotropine or thiuram) are commonly used products that can contaminate sodium chlorate and make it explosive. Ammonium salts, grease, leather, sugar, powdered metals, sulphides, cyanides, organic matter and phosphorus can also have the same effect.

Sodium chlorate may also react violently and ignite when mixed with powdered aluminum, ammonium sulphate, carbon, charcoal, manganese dioxide, triethylene glycol, wood and zinc. When heated to decomposition, it gives off toxic chlorine and sodium oxide fumes.

Health

This product is definitely not user-friendly. Although the actual metabolic path(s) is not known, it is toxic by ingestion. It is also known to cause systemic effects in humans, such as blood haemolysis with or without anemia. Haemolysis is the destruction of erythrocytes or red blood cells and subsequent loss of haemoglobin. The latter is essential in the transfer of oxygen from the lungs to the body's cells.

Emergency response

As for all dangerous goods the real danger is the abuse or misuse of the safety rules in the Transportation of

Dangerous Goods Regulations.

During a fire, flood the chemical with water. Oxygen release can cause or support combustion. Decomposition of this product will release toxic chloride fumes. Since the product is harmful to aquatic life, it should be stopped from entering water intakes and waterways.

The response crew should know which materials can react violently with sodium chlorate or cause decomposition and toxic fumes. Strong acids can release chlorine and chlorine dioxide gases. Arsenic compounds, aluminum, copper, metal sulphides, organic acids and organic matter are just a few of the materials that will react violently with this product.

Keep people away from the spill site. Instruct personnel that this is an oxidizer spill. If the spill is a liquid, contain it with a dike. If it's a powder spill, wear a dust respirator. If there is a fire, wear a full SCBA suit. Don't use leather, as this is an organic material. Keep contaminated clothing wet. When dry, sodium chlorate-impregnated clothing becomes highly flammable.

Move victims out of the spill area into fresh air. Start first aid at once. Remove contaminated clothing and flush contaminated area with water. If ingested, give milk or water and transport immediately to a medical facility.

Carefully scoop or vacuum waste, using the right filter, into a suitable container for reclamation or disposal.

Shipping under TDG Regulations

Sodium chlorate, solid
Class 5.1 UN 1495 PG II

Sodium chlorate, aqueous solution
Class 5.1 UN 2428 PG II.

Class 5.1 dangerous goods are exempt from placarding for gross masses, ie. including the container mass, up to 500 kg [approx. 1100 lb]. Sodium chlorate is not listed in Schedule XII. Therefore, an Emergency Response Plan is not required. For bulk shipments of class 5 products of Packing Groups I and II, retro-reflective placards are required. The yellow band option does not apply.



EMERGING ISSUES

Workshops

When the Train Leaves the Tracks:
Multi-jurisdictional incidents
Calgary, December 8, 1994

Scaling the Barriers:
Emergency preparedness for people with disabilities
Edmonton, January, 1995

Emergency Preparedness partnerships:
Private and public sectors working together
Edmonton, February, 1995

Critical Incident Stress
Edmonton, February 16, 1995

Emergency Planning for Industry
Edmonton, March, 1995

Emergency Preparedness in Alberta Schools
Edmonton, TBA

Emergency Preparedness and the Family
Edmonton, TBA

Emergency Preparedness and the Elderly
Edmonton, TBA

Southern Alberta - here's your opportunity to attend an Emerging Issues Workshop close to home. APSS is taking the emerging issues workshop "When the Train Leaves the Tracks: Multi-Jurisdictional Emergencies" to Calgary.

This very successful workshop deals with the potential for jurisdictional conflicts in an emergency that occurs near a junction of several local authorities' boundaries. APSS held two workshops on this topic in Edmonton last September. In order to meet client needs we are bringing this workshop to the McDougall Centre in Calgary on December 8, 1994.

The workshop scenario will be based on the train derailment in Oakville, Manitoba in December of 1992 but adapted to Alberta circumstances. Guest speakers from industry, transport carriers, government and the media will explain their roles in such a situation. Discussion will be encouraged in working groups and in the plenary session. For more information, or to be placed on the mailing list for this or any other Emerging Issues Workshop, contact:

Alberta Public Safety Services
Training School
10420 - 157 Street
Edmonton, AB
T5P 2V5
Phone: 403-422-0346
Fax: 403-427-7782

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